Arizona Department of Environmental Quality
Underground Storage Tank Section
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Phoenix, AZ 85012

GROUNDWATER MONITORING

...a lesson in LEAK DETECTION

What is it?

- Groundwater Monitoring measures for free product on the groundwater table near the UST system.

- Monitoring wells near the tank and/or product piping are checked continuously or at least once a month for free product.

Will you be in compliance?

- When installed and operated according to the manufacturer's specifications, groundwater monitoring meets the state leak detection requirements for new and existing UST systems.

- Operation of the monitoring device at least once each month fulfills the requirements for the life of the tank.

- Groundwater monitoring can be used to detect leaks from piping.

Will it work at your site?

- Groundwater monitoring works best if:
  - Ø Monitoring wells are installed through the tank backfill and
  - Ù No previous releases exist that can falsely indicate a current release.

- A professional site assessment is critical for determining these site-specific conditions.

What are the regulatory requirements?

- Groundwater monitoring can only be used if the stored substance:
  - Ø does not easily mix with water and
  - Ù floats on top of water.

- The groundwater is no more than 20 feet below the surface.

- The soil between the well and the UST system must be sand, gravel or other coarse materials.

- Monitoring wells must be properly designed and sealed to protect from outside source contamination.

- The wells must be clearly marked.

- Monitoring devices must detect at least one-eighth inch of free product.

How Does the Groundwater Monitoring Method Work ?

- Groundwater monitoring involves the use of permanent monitoring wells placed close to the UST system. The wells are checked at least monthly for the presence of product that has leaked from the UST system and is floating on the groundwater surface.

- The two main components of a groundwater monitoring system are the monitoring well, typically two to four inches in diameter, and the monitoring device.

- Monitoring devices may be permanently installed in the well for automatic, continuous detection for leaked product.

- Monitoring devices are also available in manual form. Manual devices range from a bailer, used to collect a liquid sample for visual inspection, to an electronic device that is inserted into the well indicating the presence of leaked product. Manual devices must be operated at least once a month.

- Before installation, a site assessment performed by a trained professional is necessary to determine the soil type, groundwater depth and flow direction, and the general site lithology.

- The number of monitoring wells and their placement is very important. Only a trained professional can properly design and construct an effective monitoring well system. A minimum of two wells is recommended for a single tank. Three or more wells are recommended for two or more tanks.

- If the monthly report from the monitoring device reads **fail**, then report a SUSPECTED RELEASE within 24 hours to the LUST Hotline @ 602-207-4303. However, if you have reason to believe the monitoring device is defective then immediately repair, recalibrate or replace the defective equipment and perform an additional test that reads **pass**, then no SUSPECTED RELEASE report is needed.

Maintenance

- **Physical Monitoring** must be done once every month and kept in a log book for inspection.

- **Automatic Monitors** must be maintained, calibrated, operated, and tested for operability per manufacturer' s instructions. In addition, the monitoring alarm must alert the attendant of the facility, such that if a release should occur, appropriate actions may be taken.

Required Documentation

- Keep all records of maintenance, calibrations and testing for review by ADEQ inspectors.

In the event of any discrepancy between this document and the Arizona Revised Statutes or Rules, the statutes or rules shall prevail.